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ABSTRACT

This publication is designed to assist school administrators, architects, boards of education, and others in Missouri in planning and providing facilities for departments of vocational agriculture. The first part of the guide provides information on characteristics of vocational agriculture related to facility needs; general considerations; considerations for the classroom, laboratory, library, office, conference room; and the agricultural shop. The next section of the booklet is a planning guide. It is followed by architectural building plans, which make up approximately one-half of the guide. (KC)

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PLANNING FACILITIES FOR **Vocational Agriculture** DEPARTMENTS

Missouri
Department of Elementary and Secondary Education
Vocational Agriculture Section
Jefferson City, Missouri

University of Missouri-Columbia
Agricultural Education Department

JUNE 1984

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Planning Facilities for **Vocational Agriculture** Departments

Preface

Planning new or remodeled facilities for departments of vocational agriculture is a problem which confronts many school districts in Missouri each year. The purpose of this publication is to provide information which may be helpful in making adequate and economical plans. It includes information resulting from experience gained in assisting schools with facility planning and takes into account present and probable future needs in teaching agriculture students for proficiency in the rapidly changing field of agriculture. It does not include specifications or recommendations for specialized programs such as tractor overhaul, horticulture, etc. It supersedes the pamphlet **Planning Facilities for Vocational Agriculture Departments** published in March, 1957.

The material was developed by members of the State Department of Elementary and Secondary Education, Agricultural Education Section and the Teacher Education Departments in Missouri. Assistance was rendered by the Director of Building Services of the Department of Elementary and Secondary Education, architects, school administrators, contractors, and instructors of vocational agriculture. Many publications from other states were reviewed for suggestions and ideas.

Mr. Raymond D. Hagan, Supervisor, Agricultural Education, State Department of Elementary and Secondary Education, Jefferson City, Missouri, and Dr. Richard E. Linhardt, Associate Professor, University of Missouri-Columbia, were responsible for the development of this publication. Much of the resource material was taken from materials developed by Dr. Glen Shinn, Professor, Mississippi State University.

Planning Facilities for **Vocational Agriculture** Departments

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Planning Facilities for **Vocational Agriculture** Departments

Introduction

School districts planning to introduce vocational agriculture are faced with the problem of providing the kind of facilities that will make it possible for the newly established departments to render the most effective educational service to the farmers and agricultural business people in their communities. Schools with established departments find that new developments in farming, especially in mechanization, the use of power, adult education, agricultural business, and the resulting changes in instructional needs make it necessary to replace or extensively improve their facilities.

Because of the time and energy required to replace or expand buildings and equipment, it is important that present needs be met, and that provision be made for future expansion. In constructing new or in remodeling existing buildings, careful planning and attention to details make it possible to provide a multitude of refinements and conveniences which add much to the efficiency of instruction and to the satisfaction of patrons, pupils, and school personnel. These conveniences often may be obtained at a cost little greater, if any, than that of similar buildings planned with less attention to details.

This publication is designed to assist school administrators, architects, boards of education, and others in planning and providing facilities for departments of vocational agriculture. It contains a description of general characteristics and special standards for buildings and equipment for vocational agriculture and some floor plans developed to meet these standards. It is not intended that the publication should result in standardization or freezing of design but rather that assistance be provided in developing more *efficient* facilities.

Making use of the consultative services of the State Department of Elementary and Secondary Education in addition to employing a qualified architect provides further assurance that the school district will receive maximum value for the money spent. A plan for the overall development of the school plant should probably precede any additon. In this as well as in the final checking of architect's plans, assistance may be secured from the Director of School Building Services in the Department of Elementary and Secondary Education. Administrators should discuss facility needs with the District Supervisor of Agricultural Education, Department of Elementary and Secondary Education and may wish to have a joint meeting with the board of education. The District Supervisor of Agricultural Education should be asked to confer with the architect in both the preliminary and later stages of planning and should assist in planning the location of equipment.

It is very important that the facility conform to the Occupational Safety and Health Administration Standards for safety and that the facility be built to accommodate those who are handicapped.

Characteristics of Vocational Agriculture Related to Facility Needs

The aim of vocational agriculture is to train recent and prospective agriculturalists for proficiency in business and farming. Instruction is provided for adults, young farmers, and high school students. The basis of instruction is the supervised occupational experience program of the students. The instruction includes experiences in the use of approved practices, record keeping, and analysis. Skills and abilities complementing the supervised occupational experience programs, adult programs, and agribusiness programs are gained by means of instruction in the classroom, on field trips, and in the agricultural mechanics shop. Equally important are the leadership training experiences received through the activities of the Future Farmers of America for high school students, and through the activities of the Young Farmers and Young Farm Wives organizations for adults. To meet the educational needs of the present and prospective farmers and agricultural workers enrolled, it is essential that an integrated program of instruction be provided.

The rooms and equipment needed to properly conduct a good educational program in vocational agriculture differ considerably from those needed in other areas of secondary education. The agricultural mechanics shop must be of sufficient size and arrangement to accommodate large equipment. To conduct a well organized program for the various groups to be served, it is essential that the facilities include a classroom, office and conference room, agricultural mechanics shop, storage rooms, and restroom facilities. Also an attractive entrance way should be provided that allows access to classrooms, offices, and restrooms.

2

General Considerations

Rooms for vocational agriculture are sometimes included in a unit separate from other school buildings. In other cases, the facilities are a part of a building housing the entire secondary school. Various advantages are claimed for each plan. The decision, however, is one of both policy and expediency. In cases where a new plan is being developed under one roof, the vocational agriculture rooms should be a wing of the building so located that they maximize the use of solar heat and access from the street is available to the large door of the shop and the storage of materials. It is important that the vocational agriculture rooms be so located that shop noises will not disturb other classes and that music classes and other "noisy" departments will not disturb the agriculture classes. Where facilities for vocational agriculture are to be added to an existing school plant, requirements can often be most satisfactorily met by constructing a separate unit. In any case, it is important that classroom, office, storage facilities, and agricultural mechanics shop be located together. Space should be available outside the shop and adjacent to the large door for a work and storage area.

Materials used should ordinarily be the same as those from which the other school buildings are constructed. One of the most desirable materials for appearance and permanence is brick. Where first cost is a primary consideration, concrete blocks or steel buildings may be an economical choice.

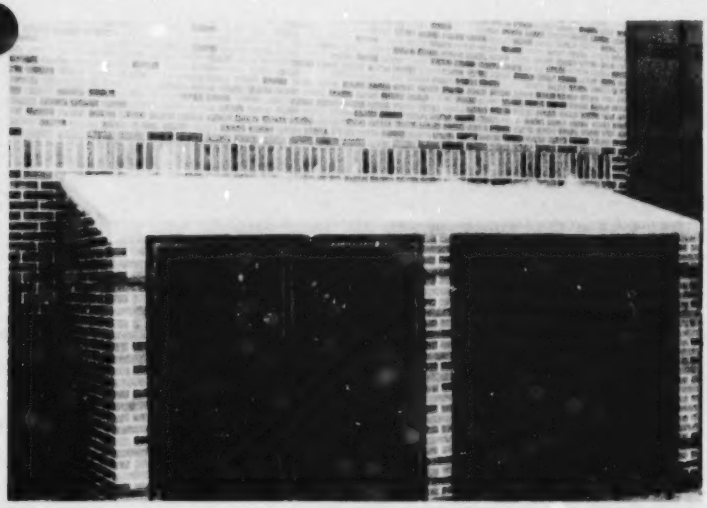
While steam heat from the central heating system is most desirable in some respects, it should not be used if it necessitates heating the entire high school building in order to heat the vocational agriculture rooms. Adult classes and other meetings on days and at hours when school is not in session make independent heating a necessity. A hot air furnace may be satisfactory if it is so installed that dusty air from the shop cannot be circulated into the classroom. Unit heaters, either gas or steam, are satisfactory for the shop but are very unsatisfactory in the classroom because of noise and drafts. Heating and ventilating noise should be kept at low levels so it *does not intefere with teaching and demonstration.*

Suggested entrance way allowing access to classrooms, offices, and restrooms.

The growing use of power tools and electrical equipment makes it necessary to provide for all present electrical requirements and also for future expansion in the use of electricity. In no case should the main service lines and fuses have a current carrying capacity of less than 700 amperes at 230 volts. Care should be taken so that equipment and power are matched, 3-phase should be used wherever possible.

Adult classes, young farmer classes, FFA activities, and Young Farmer and Young Farm W[illegible]s activities are frequently attended by both men and women. It is therefore desirable that conveniently located toilet facilities for both men and women be available whether the agriculture department is housed in the main building or in a separate unit. Toilets should be located in the entrance corridor. A lavatory large enough for six or more to wash at once should be located in the agricultural mechanics shop.

Storage should be provided so delivery trucks can unload wood, metal, and other materials easily. Heavy materials should be moved to a storage room as close to the delivery truck as possible.



Well-ventilated oxygen and acetylene storage area.

A general rule to follow for size of the agricultural mechanics shop is: (100 square foot per student in shop/largest class) plus, (number of machines times 56 percent) plus, (20 percent of this total). (Lamb's Formula).

Classroom - Laboratory - Library

Classrooms for vocational agriculture are usually equipped with tables and chairs rather than with individual desks or tablet arm chairs. Tables and chairs make arrangement flexible, encourage the use of a variety of reference materials in seeking solutions to practical problems, and are adapted to such activities as plant, seed, and soil specimen study.

A cabinet equipped with sink and running water is usually provided in the classroom for laboratory work such as milk testing and soil testing.

Recessed cabinets with a work area behind them permit maintenance of the efficient rectangular form of the classroom. Such an arrangement makes it possible for demonstrations conducted from the work area to be observed from the classroom and for individual laboratory work conducted in the work area to be supervised by the instructor in the classroom.

A library area in the classroom is ordinarily equipped with shelves and cabinets for books, bulletins, magazines, notebooks, and supervised farming record books.

The classroom should be large enough to accommodate additional chairs for meetings of the Future Farmers of America, meetings of parents, young farmer classes, adult classes, and such other meetings of agricultural groups as may be desirable.

The framework of this chair is welded steel; it is strong and sturdy, yet is light-weight.

Office and Conference Room

The office and conference room is a place for the instructor to work, a place for conferences between teacher and students, and for conferences of groups of students such as FFA committees, farmers, and others. The teacher's desk, telephone, and files of records and reports are usually kept in the office and conference room. The office and conference room should have an entrance from a corridor so that farmers and others may visit an instructor without entering the classroom. Glass panels make it possible for the teacher to work in the office and at the same time see what is happening in the classroom and shop.

Doors of adequate width and height should be provided.

Agricultural Mechanics Shop

Significant trends in agriculture are the (1) decreasing number of farmers, (2) increasing size of farms, (3) increasing output of farm products per farmer, (4) increasing investment in buildings, machinery, and equipment necessary to operate an economical farming unit, and (5) increase in agricultural related businesses. These trends point to the need for improved instruction in construction and repair of farm buildings and equipment, and in selection, servicing, maintenance, and repair of farm power units and machinery.

Agricultural mechanics projects are assuming an increasingly important place in the supervised farming programs of adult young farmer and high school students. Many farming activities of a mechanical nature can be much more efficiently supervised with groups of students in the school agricultural mechanics shop rather than individually on their home farms. Shops for agricultural mechanics instruction must be designed for the kind of program to be conducted.

Large areas of unobstructed floor space, high ceilings, and large doors are essential to provide students with significant learning experiences in the maintenance and repair of farm machinery and in the construction and repair of farm equipment.

Door guards should be installed to protect doors from damage by machinery.

Adequate heating is required in order that work may be systematically scheduled. Independent heating is necessary in order that adult classes may be held or special work done at hours and on days when the main school building is not heated. Sufficient natural and artificial lighting and a scientifically designed color system contribute to safety and to quantity and quality of work done.

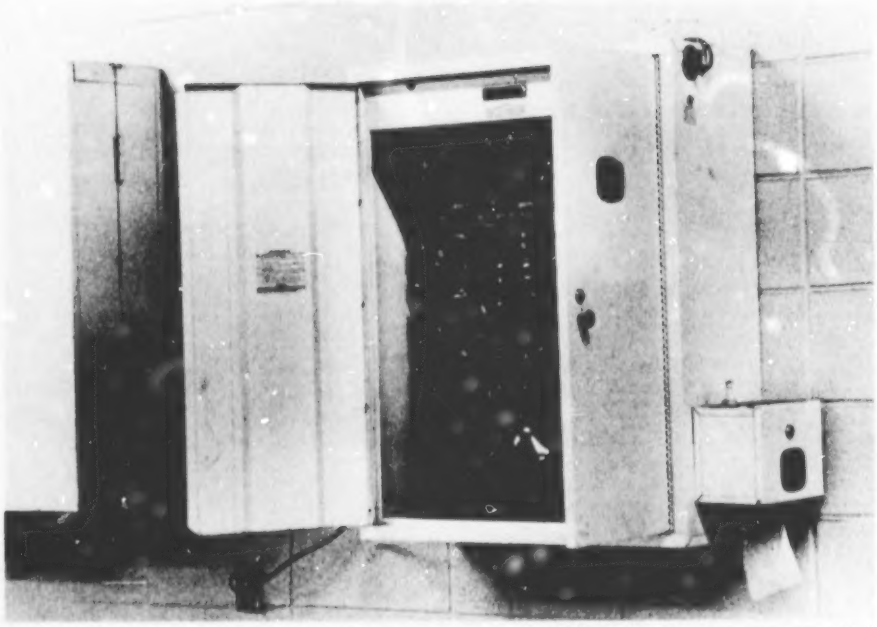
To effectively serve the educational needs of adult, young farmer, and high school classes, the shop must be equipped with a variety of hand and power tools. Experience has shown that it is more economical to purchase high quality hand tools and heavy duty power tools of larger capacity than those ordinarily found in home farm shops. Tools in the school shop ordinarily receive many times the amount of use and much more severe use than similar tools on the home farm. New kinds of tools will need to be added from time to time and preferably in advance of their general adoption on farms in the community.

A smooth level concrete floor facilitates accurate work. A drain in a suitable location with a slight slope in a limited area around it promotes both cleanliness and safety.

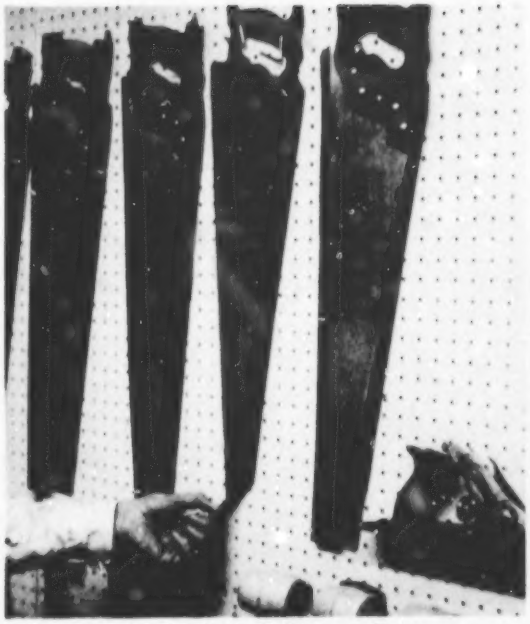
Some programs require special facilities like this greenhouse operation.

Careful planning and arrangement of equipment encourages more efficient work and close supervision in the shop. Most modern agricultural mechanics shops have areas designated for various kinds of work with tools and equipment located in the areas in which they are used. Too often equipment selection and arrangement and tool storage are considered after the shop building is completed. In such cases, wall space for cabinets may not be available, electric service may be inadequate and inconvenient, and the best that can be secured is a compromise arrangement which leaves much to be desired. A more logical procedure is to determine in advance the areas to be provided, the location of each piece of equipment, and provisions made for items to be added later. The building may then be designed and electric service provided to fit the work and equipment layout. It is strongly recommended that all tool cabinets and work benches be shown on the architect's plans. The locations and electrical requirements of each power tool to be installed at time of construction or at any future date should also be shown on the architect's plans. Bus bars below the ceilings or rigid conduits in the floor should be included for machines located away from the walls. The District Supervisor of Agricultural Education can help materially in planning equipment arrangement before final location of windows and doors have been determined and before electrical circuits have been located.

Provision must be made for storage of unfinished projects, materials, supplies, and tools not kept in the shop. A paved area enclosed by a fence and with a part of it covered by a roof furnishes economical storage for bulky materials and for farm machinery and equipment when not in immediate use. In mild weather, large construction and repair projects may be carried on in both the open area and the covered area. An area should also be provided for cleaning equipment outside of the agricultural mechanics shop on the paved work area.

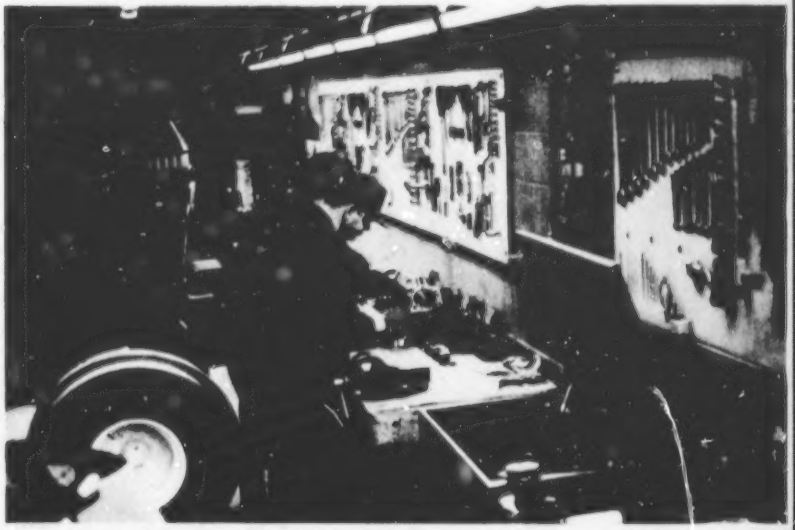


Safety glasses must be provided for each student.

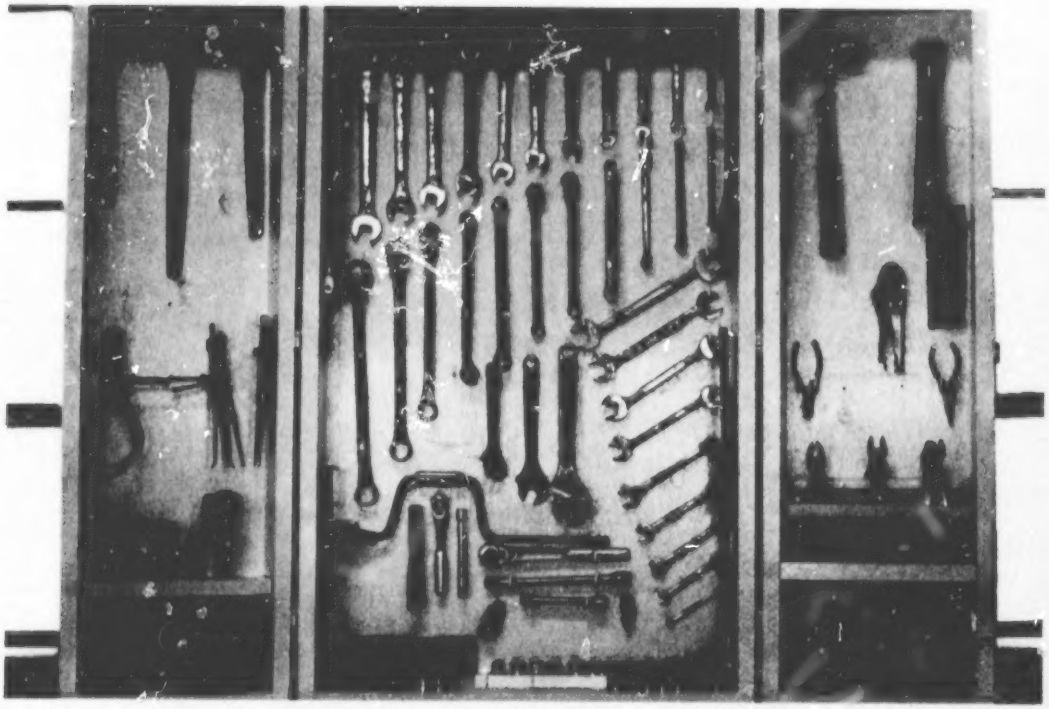


All hand tools should be "silhouette."

planning ag. facilities



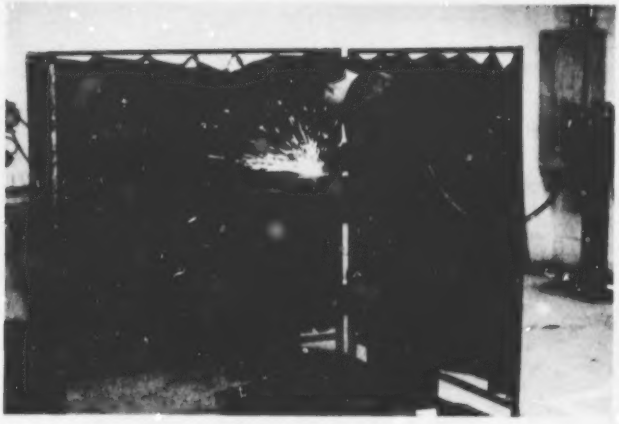
A well-lighted workbench.



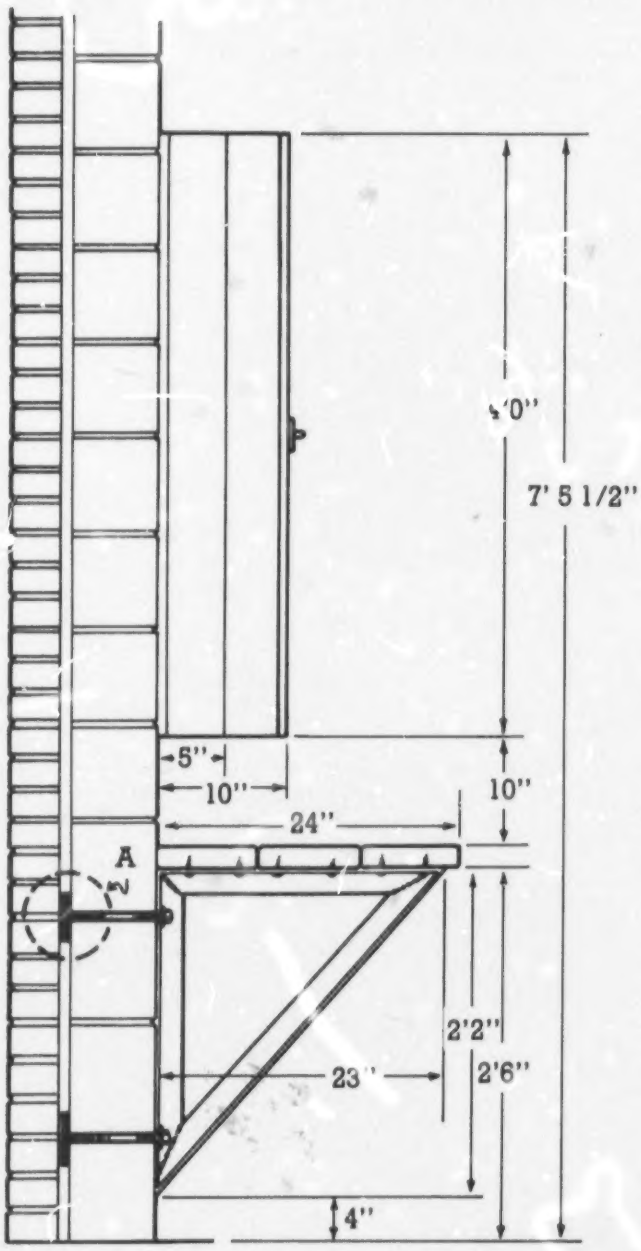
A sturdy folding tool panel constructed with 5/4" S2S and 3/4" plywood.

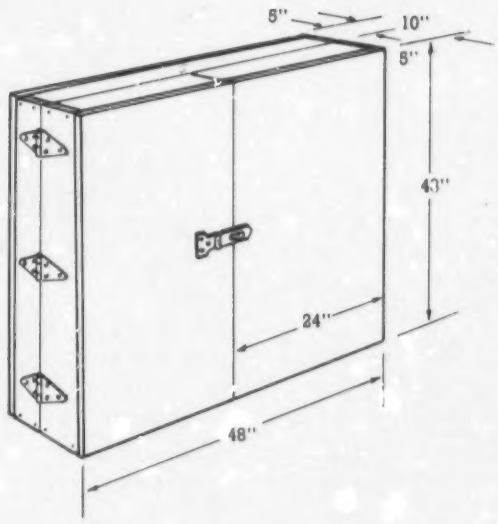
a photographic look

Work isles for working on large equipment.

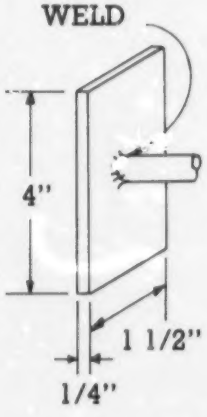


Portable screens for welding and grinding.

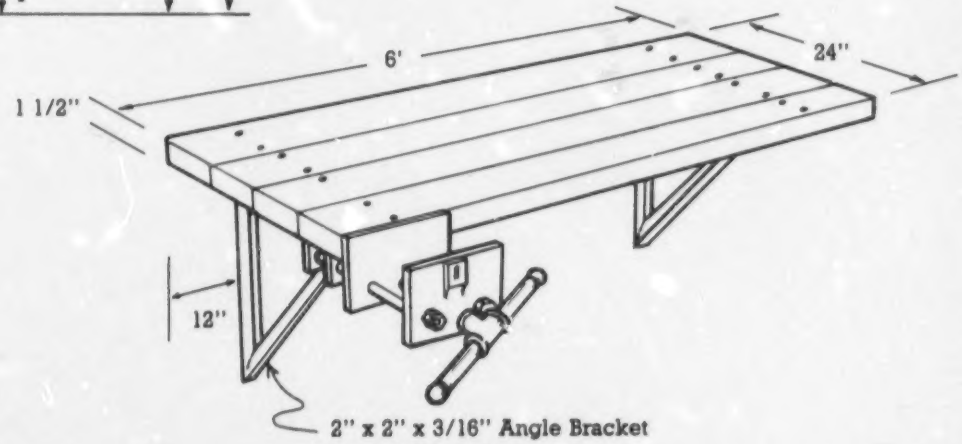




Architect's drawings should include provision for attaching benches and cabinets to wall.



DETAIL "A"



2" x 2" x 3/16" Angle Bracket
Set in 12" to Clear Vise

General Considerations

Location:
- Future development of physical plant for entire high school planned in advance
- Conference with State Director of School Building Services
- Services of qualified architect necessary
- Reasonably level location with adequate drainage desirable
- At least 50' from street or property line

Access:
- Student entrance on side toward main high school building or fronting on same street or walk as main high school building
- Machinery door and outside work and storage area away from front street or front of main high school building
- Access to machinery door and outside work and storage area from side street, back street, or from a driveway

Grade:
- Shop floor as near the level of drive and outside work area as practical

Architecture:
- In harmony with other buildings on the school ground

Materials:
- Same as other permanent buildings on school grounds if possible
- Brick - a good choice for appearance and durability
- Concrete block faced with brick on front
- Steel building economical choice

Heating:
- Provision for heating vocational agriculture unit without heating other rooms or buildings
- Steam heat from central heating system desirable when independent control is provided
- Independent hot air furnace not acceptable if dusty air from shop circulates into classroom
- Unit gas heaters not satisfactory for classroom but acceptable in shop

Classroom

Size:
- Minimum of 780 sq. ft., exclusive of storage room and laboratory space, with minimum width of 26' and minimum length of 34'

Color of Walls and Ceilings:
- Light reflective value of at least 60% for walls
- Tints, not deep tones
- Tints of the warm colors, orange and yellow for north rooms
- Tints of cool colors, blue and green for south rooms
- Three colors acceptable in classrooms where all the light comes from one direction, with the darkest color on the wall opposite the windows, the next lighter color on the end walls and the lightest value on the window wall
- Ceilings - white or off-white with light reflective value of 80% or more

Materials for Walls:
- Concrete block with joints carefully tooled, wood or plaster

Material for Ceilings:
- Sound absorbent material, preferably acoustical tile or acoustical plaster

Height of Ceiling:
- Minimum 9'6"

Floors:
- Asphalt tile, vinyl tile, linoleum
- Concrete unsatisfactory except in laboratory area

Lighting:
- Venetian blinds and dark shades or audio-visual blinds for light control
- At least two rows of lights - indirect or semidirect
- Artificial light to provide 100 foot candles at the working level in the poorest lighted area (see note, page 14)
- If fluorescent, luminaries included to protect eyes of occupants from glare
- Brightness - difference ratio of not more than 10-1 between luminary and surrounding area, 3-1 ideal

Windows:
- Extend as near to ceiling as practical
- Window sills, at level of eyes of occupant when seated, about 45 inches

Chalkboard:
- 14-20 linear feet, 42"-48" wide
- 38"-42" above the floor
- Lower side inclined away from wall to reduce glare
- Green color desirable
- 20-26% light reflective value

Bulletin Board:
- 8-12 linear feet, same width as chalkboard

Laboratory:
- Minimum of 8' x 10' if separate room or area
- Cabinet 2' wide, 32" high, minimum 7½' long, equipped with sink, equipment storage below
- Double convenience outlet (three wire grounding type)

Storage Cabinets:
- To store teaching aids, supplies, printed materials, equipment for picture projection, and other materials used in teaching
- To fit the space available, up to 24' in length
- Unit type containing sections for magazines, bulletins, students' notebooks, and reference books preferred over several independent cabinets
- Storage for miscellaneous teaching aids in lower 30" if needed
- Inside dimensions of "pigeon holes" for bulletins not more than 2½" vertical, 9" width, and 11½" deep
- Commercial metal cabinets for bulletins acceptable as part of unit cabinet, or independent of unit cabinet
- Independent cabinets acceptable if already available

Tables:
- Library-type table (see figure 6)
- Sturdy with adequate leg room
- 30"x 96" approximate size for three students

Chairs:
- Welded steel frames, wood bottoms, and back rests
- Strong and sturdy
- 16"-18" high
- Folding chairs unsatisfactory

Projection Table:
- Combination projection table and projection storage cabinet mounted on casters desirable
- Portable table with detachable legs reasonably satisfactory
- 4½' x 5' high

Teacher's Stand:
- Lectern feasible in combination with desk in classroom

Wall Picture Screen:
- Mounted at convenient place in classroom
- Roll-up type recommended
- 5' x 5' adapted to average classroom

Dark Shades:
- Audio-visual blinds or dark shades over venetian blinds necessary for use of projection equipment

Electric Outlets:
- Convenience outlets (every 8' around diameter)

Entrance Corridor

Function:
- Convenient access to various parts of building
- Reduced heat loss
- Improved order and efficiency

Coat Rack:
- Shelf 1' wide, 6'-8' long, and 5'6" from the floor with pipe for coat hangers below

Water Cooler:
- Cabinet type

Janitor's Closet:
- Minimum size 4' x 4'
- Equipped with mop sink

Office and Conference Room

Location:
- Between classroom and shop; power ventilation
- Glass panels in wall adjacent to shop and classroom
- Panels 4' horizontal, 3' from floor

Size:
- Minimum width 10'; length 14'

Lighting:
- 75 foot candles of artificial light measured at desk level (see note, page 14)
- Windows in outside wall

Desk:
- Standard office desk

Chairs:
- One standard office chair
- Two other chairs

Filing Cabinets:
- Two steel, legal, four drawer minimum, ball bearing drawer slide, with lock

Classroom Storage

Purpose:
- To store equipment not adapted to storage in a cabinet and to supplement storage space in cabinets

Location:
- Adjoining classroom
- Easily accessible

Size:
- Width 5'-6', length 8'-10'

Shelves:
- Shelves one foot wide placed along walls 1½' to 2' apart
- Space for specific equipment

Restrooms

Number:
- Two: one man, one woman
- Two stall minimum for women
- Two stall, two urinal for men

Size:
- Large enough to accommodate handicapped

Location:
- Entrance from corridor

Lavatory:
- One small in each

Agricultural Mechanics Shop

Floor Dimensions:
- From 50' to 60' wide by 70' to 80' long

Floor Material:
- Smooth concrete, level except in the drain area
- Treated for skid resistance around power machines

Walls:
- 14'-16' high (14' clearance)
- Pilasters on the outside leaving walls straight on the inside

Large Door:
- From 14' high by 16' wide
- Electric overhead type
- Glazed from 4' above the floor
- Located in center if in end of building
- Located 8' or more from end if on side of building
- Small door beside large door for added safety in case of emergency and to prevent heat loss caused by opening the large door to enter or leave

Heating:
- Sufficient for comfortable work in cold weather
- Not to occupy floor space in shop
- Independent control if main school heating plant is used
- Must not circulate dusty air into the classroom

Agricultural Mechanics Shop Continued

Roof:
- Flat, gable, or arched, to harmonize with the architecture of other buildings
- Supported on trusses making posts unnecessary
- Minimum of 14' clearance between floor and roof trusses
- Special truss. Monorail for three-ton hoist

Ceiling:
- Essential unless adequate insulation included in roof
- Improves lighting by reflecting and diffusing

Artificial Lighting:
- Intensity of 100 foot candles diffused, with minimum glare and shadows (see note, page 14)
- Strobe light effect to be removed
- Three or four rows of fixtures 10' to 12' from the floor
- Sufficient number of switches to adjust light to needs
- Local lighting on machines where close work is done

Interior Painting:
- Essential for safe and efficient work (see standard)

Electrical Service:
- 120/240 volt 1-phase service for lights, convenience outlets and motors
- 240 volt 3-phase service in addition to dual voltage 1-phase service if available (3-phase motors in larger sizes cheaper and less trouble than 1-phase motors)
- 700 amp minimum
- At least one 120 volt lighting circuit for each 640 sq. ft floor area
- At least three rows of lights, spacing, and wattage to give at least 75 foot candles (see note, page 14)
- One light fixture at each machine where exacting work is done
- One 120 volt convenience outlet circuit for each 5 to 8 outlets. #12 wire, 20 ampere fuses
- One convenience outlet for each permanently-located machine located near wall
- One duplex convenience outlet located 37" above the floor every 8' at longer benches
- One convenience outlet for each 20' of wall elsewhere around the shop
- One 240 volt 1-phase motor circuit for each permanently located motor ½ hp or larger, wire and fuse size according to size of motor
- One 240 volt 1-phase welder circuit for each AC welder, #6 wire, 50 ampere protection
- One 240 volt 3-phase motor circuit for each motor 1 hp or larger, wire sizes and protection according to size of motor
  a) service through rigid conduit in the floor direct to machines located away from walls
  b) conduit for machines planned but not to be installed, cut and capped flush with floor
  c) conduit large enough that wires may be easily removed
- Wall space for cabinets unobstructed by conduits
- All 1-phase motors, welders, power devices, and convenience outlets controlled from power panel with lockable door and with fusable disconnect switch located ahead of the panel mains readily accessible when the door is locked with panic button
- All 3-phase motors and power devices controlled from a power panel with lockable door and with a fusable disconnect switch located ahead of the panel mains readily accessible when the door is locked
- Lights controlled from a panel with fusable disconnect switch located ahead of panel mains
- Motor circuits protected with thermal magnetic multi-breakers or time delay fuses of suitable size
- All three phases of 3-phase motors protected at near running amperage to prevent 1-phase burnout
- Emergency disconnect switch (panic button) located in the office and at convenient location in the shop

Arc Welding:
- Shielded welding booths and curtains, portable screens for project construction
- Range outlets 2' above the floor

Woodwork Benches: (see illustration, page 8)
- Size - 2' wide, 4' to 8' long and 2'8" from floor
- Material - 2" S2S hardwood preferred, pine acceptable
- Supported on welded metal brackets fastened to wall by means of bolts imbedded in masonry

- Special care necessary to get bolts located in exact position; a little error makes them useless
- Space brackets 3' to 4' apart
- Left bracket 12" from end of bench to provide space for vise
- Heavy duty woodworking vises, either continuous screw or rapid acting, with dog
- Vises mounted flush with top and left end of bench
- Shim as long as width of bench installed under vise
- Holes in bench top for stop
- 2' spaces between benches

Other Benches:
- Similar to above but continuous

Folding Tool Panels: (see illustration, page 8)
- Dimensions - 4' from top to bottom and 10' from front to back
- Open width 4' to 8'
- Mounted on wall with expansion shield and screws, 42" from floor
- Two or more identically equipped folding tool panels for woodworking, one for each three or four woodworking stations
- One folding tool panel for woodworking tools less frequently used
- Additional folding tool panels in suitable locations for cold metal work, blacksmithing, machinery repair, electricity, tool sharpening, soldering, painting, electrical work, arc welding, acetylene welding, concrete work
- Equipment for two areas of work combined in one cabinet when necessary
- Storeroom a desirable place to store infrequently used, expensive, or delicate tools

Lumber and Metal Storage:
- Side delivery, welded pipe, lumber rack in storeroom
- Vertical supports of 2" pipe 4' apart, with arms 12" long welded to vertical supports 12" apart in the clear
- Arms also of 2" pipe
- Large quantities of lumber stored in outside covered work and storage area
- Room 9' x 25' with access for each truck unloading

Metal Storage:
- Vertical metal storage rack 5' to 6' wide and 12' high with 6" spaces
- 9' x 24' minimum

Ventilation:
- Canopy with suitable fan, precipitator, capture, or other adequate exhaust system to remove fumes from welding area, that meets minimum OSHA standards
- If spray painting is done insde, a commercial spray painting booth or room to be provided to meet minimum OSHA standards

Wash Sink:
- Location - in main shop room, not in toilet or other constricted area
- Size - space for 8 to 10 to wash at once (circular)
- Provision for soap, towels, and towel disposal

Safety

Equipment:
- Constructed and arranged to provide orderly storage of materials and minimum obstruction of cleaning operations (A safe shop is a clean shop)

Flammable Storage Room:
- Storage for gasoline (if used) and other flammables in proper flammable storage area

Safety Areas:
- Indicated by 2" safety lines around power machines
- Non-slip surfacing applied to area where operator stands

Fire Extinguishers:
- Extinguisher capable of extinguishing a Class A test fire and an extinguisher capable of extinguishing a Class B or Class C test fire mounted on a red panel at each end of the shop
- Fire blanket
- Hose bib and 50' garden hose

First Aid Cabinet:
- On a wall near classroom door
- Green with white cross on the door or white with green cross

Shop Storage Room

Purpose:
- To store lumber and metal, supplies, and equipment not adapted to storage in the shop
-

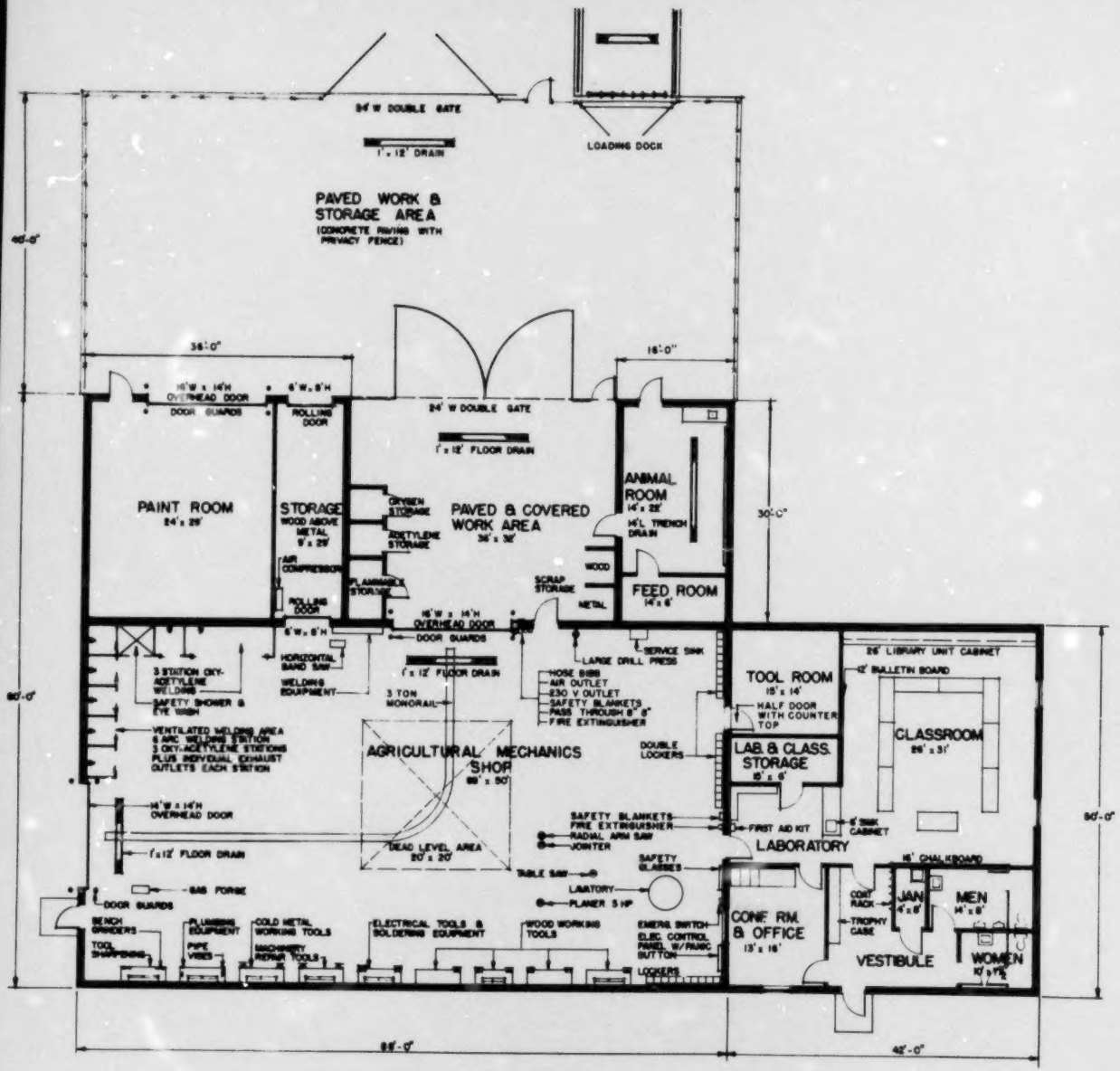
Size:
- 9' to 10' wide and 25' long

Entrance:
- From shop
- Door 5' wide, roll type
- Outside to drive with 5' roller door

Equipment:
- Side delivery lumber rack on one side
- Side delivery metal rack on other side

NOTE:
The number of foot candles of light required in the agricultural mechanics shop should be determined at time of construction in conversation with the architect. The compromise between energy conservation, adequate lighting, and the use of intense supplemental lighting at work stations may vary the lighting requirement from 50 to 100 foot candles.

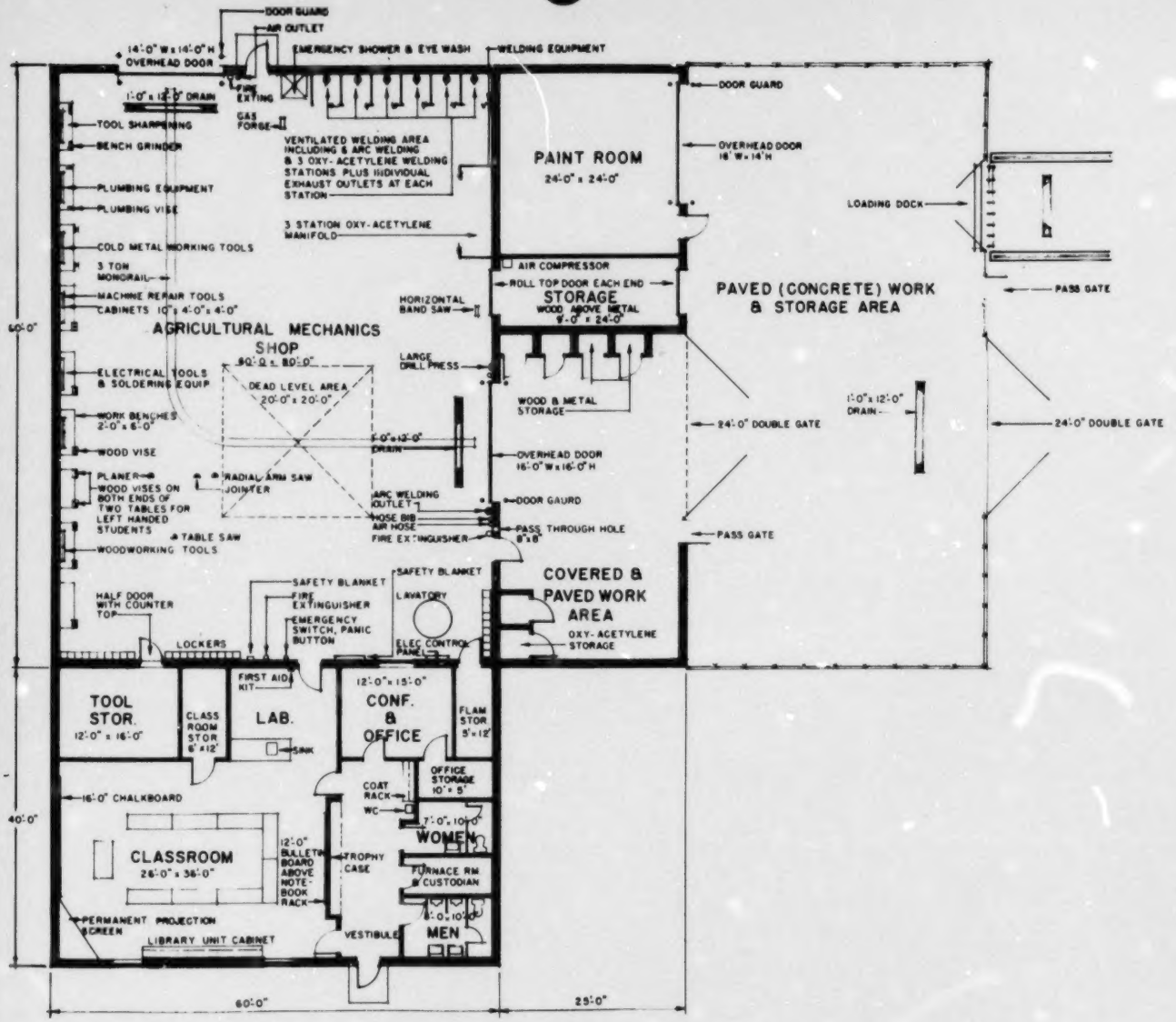
Architect's Drawings - Examples



MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN I 1983

0 4 8 16 24



MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN II 1983

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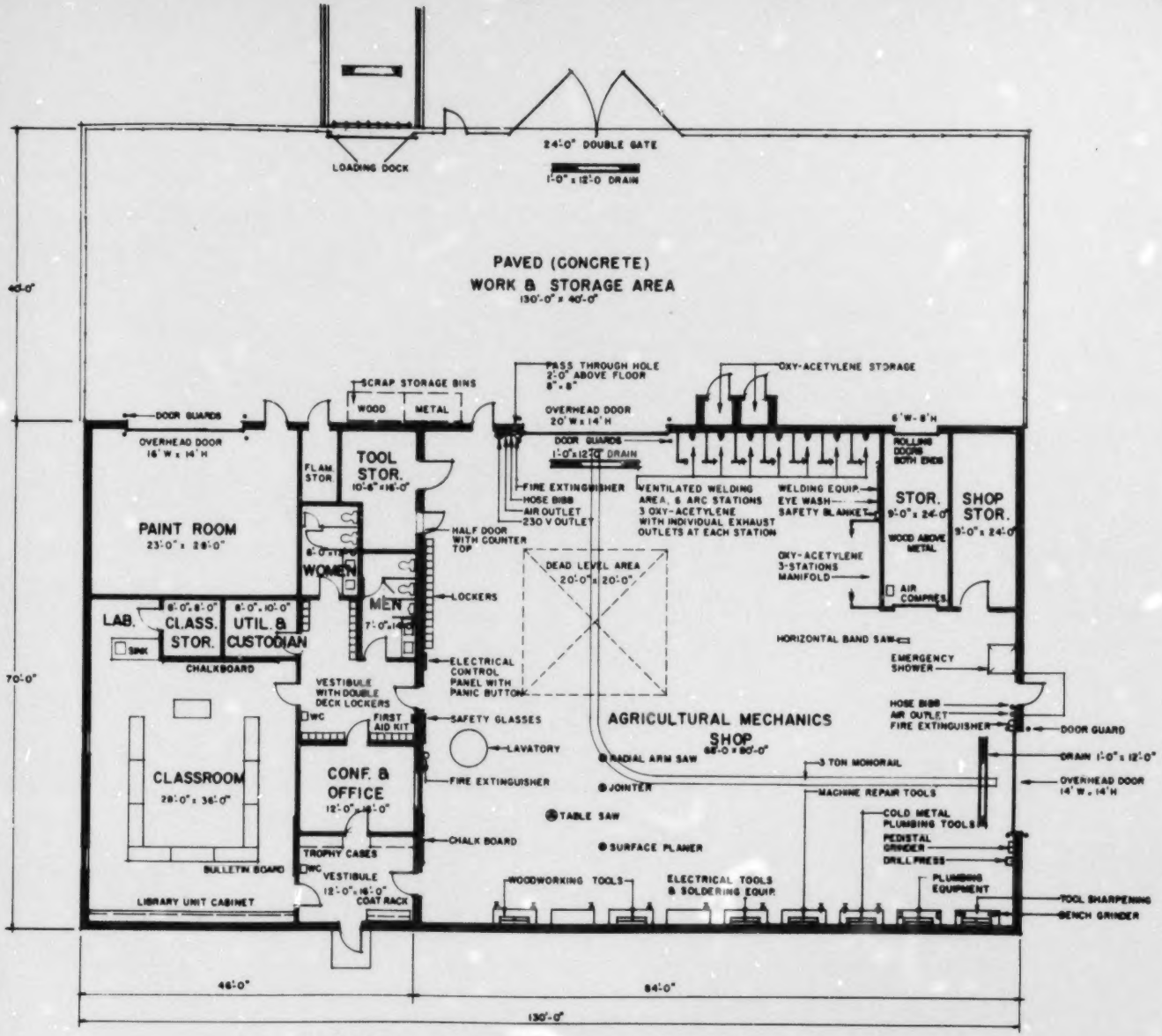

MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN III 1983

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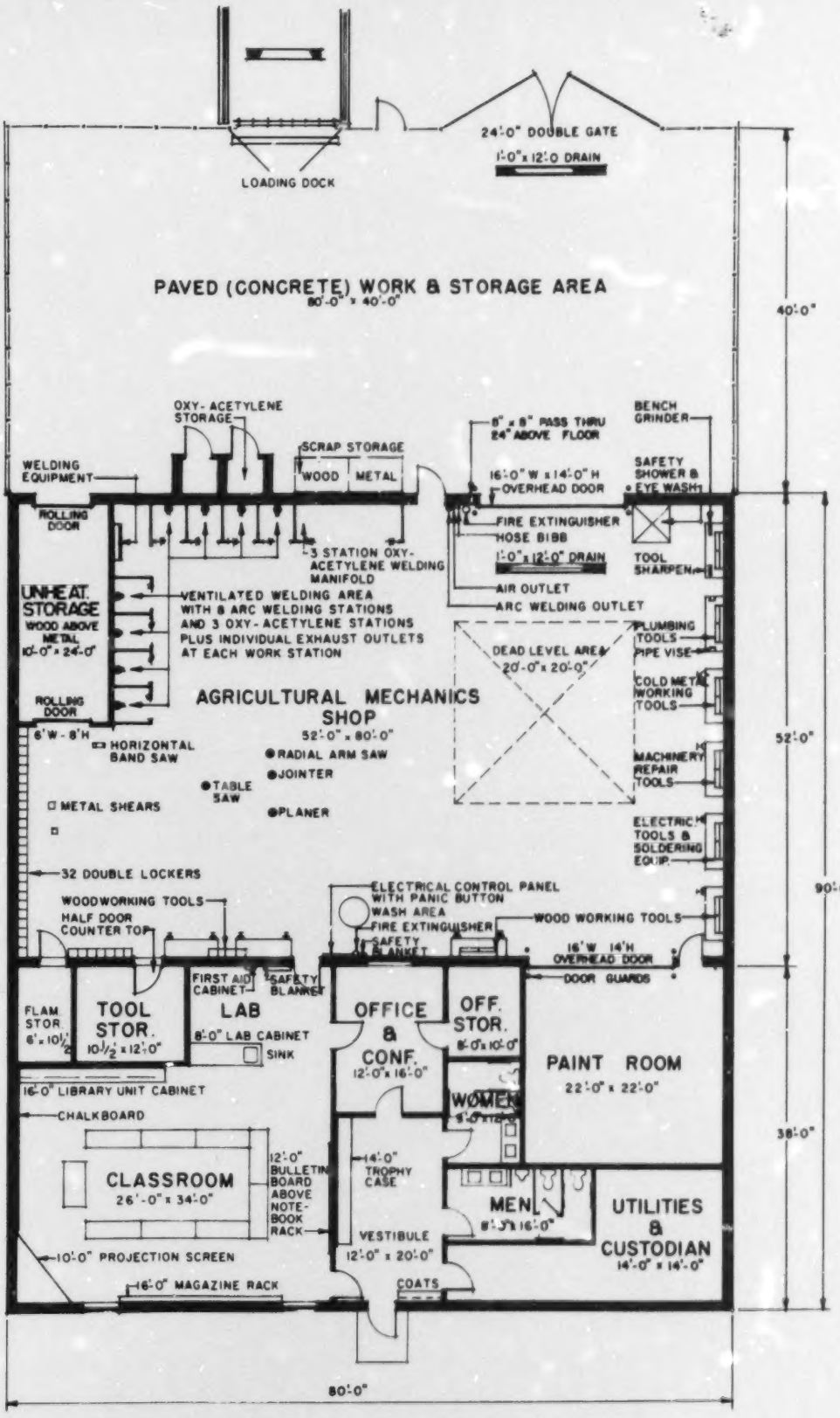

MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN IV 1983

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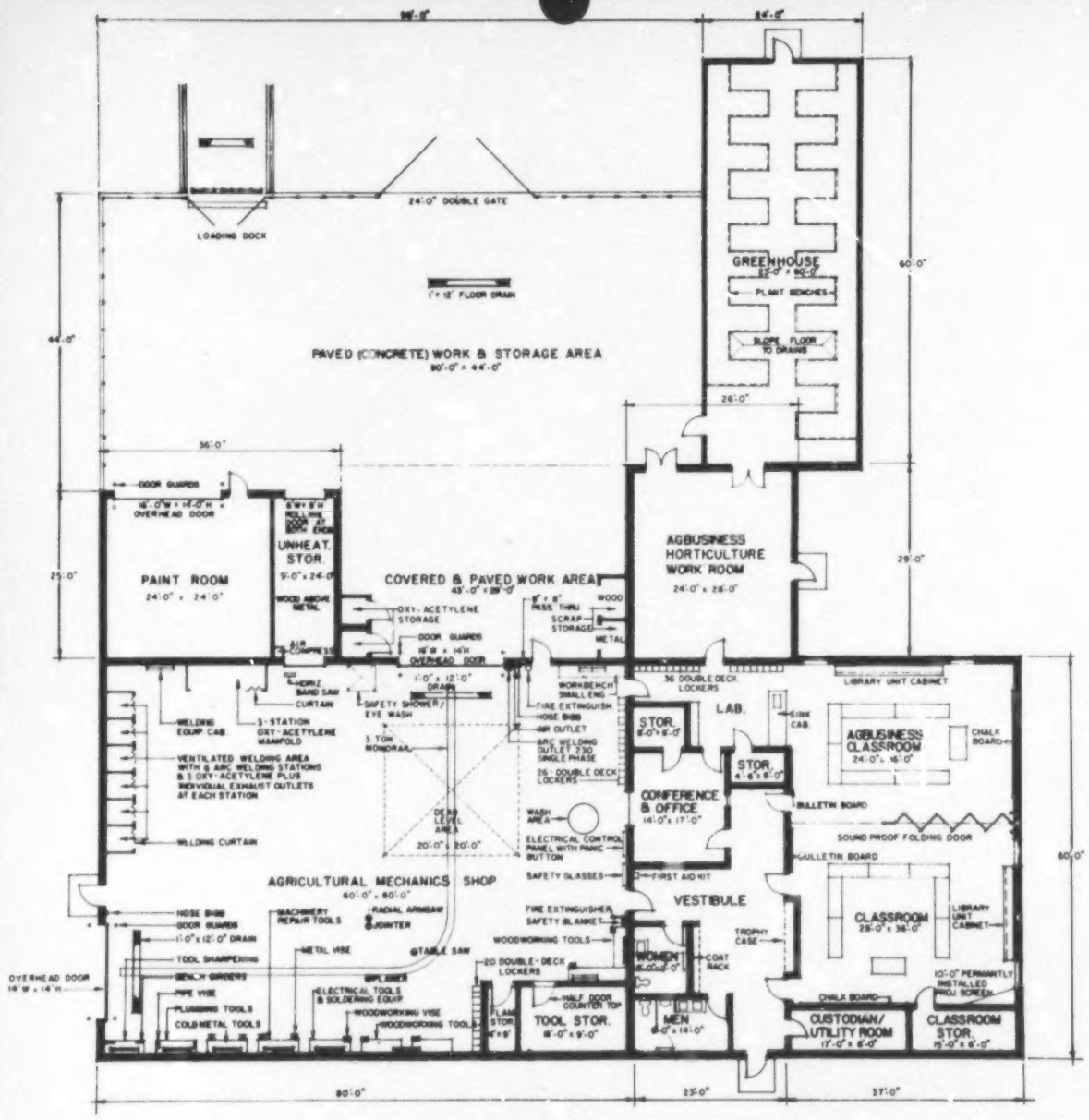
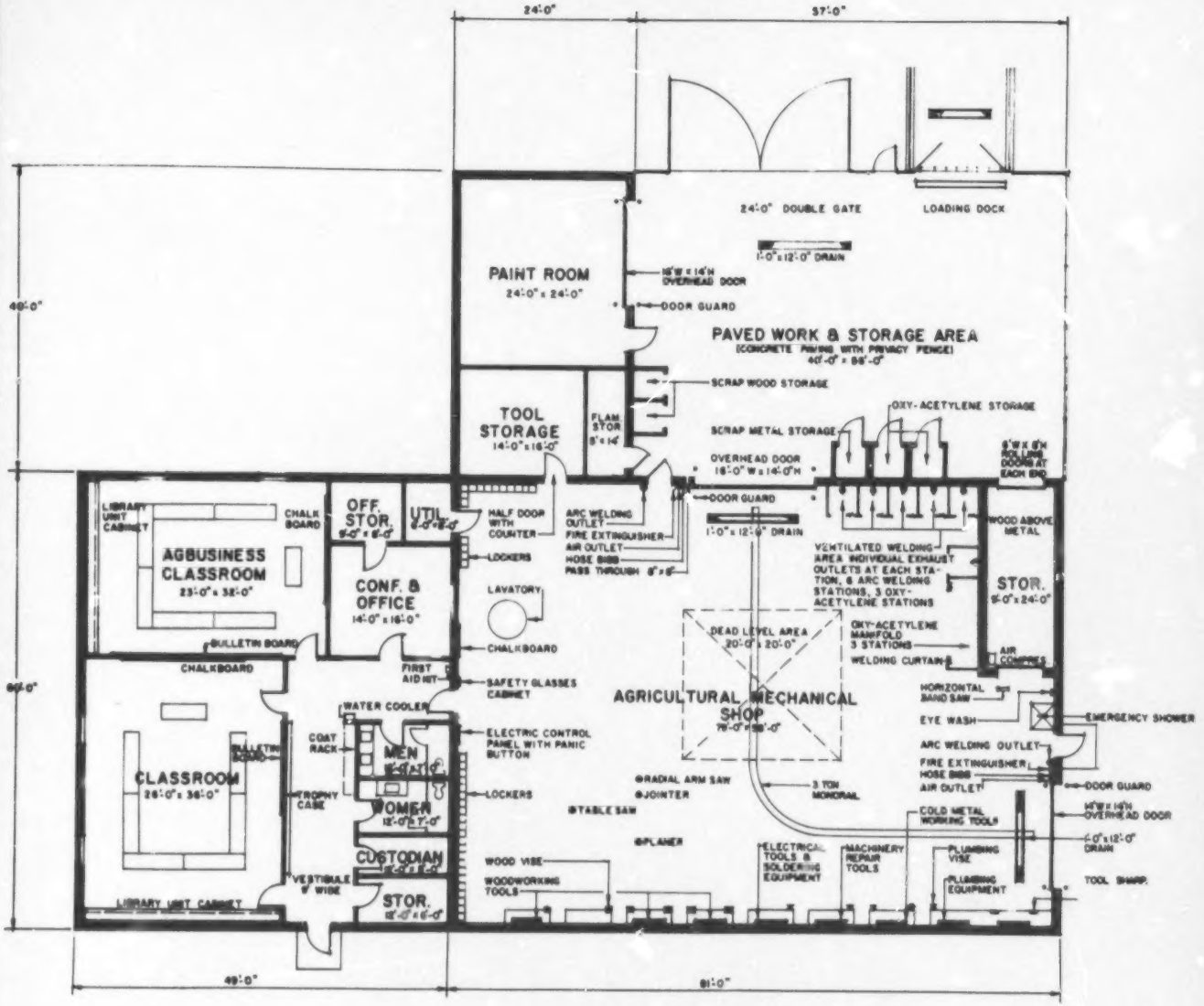


MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN X 1983



MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN XI 1983

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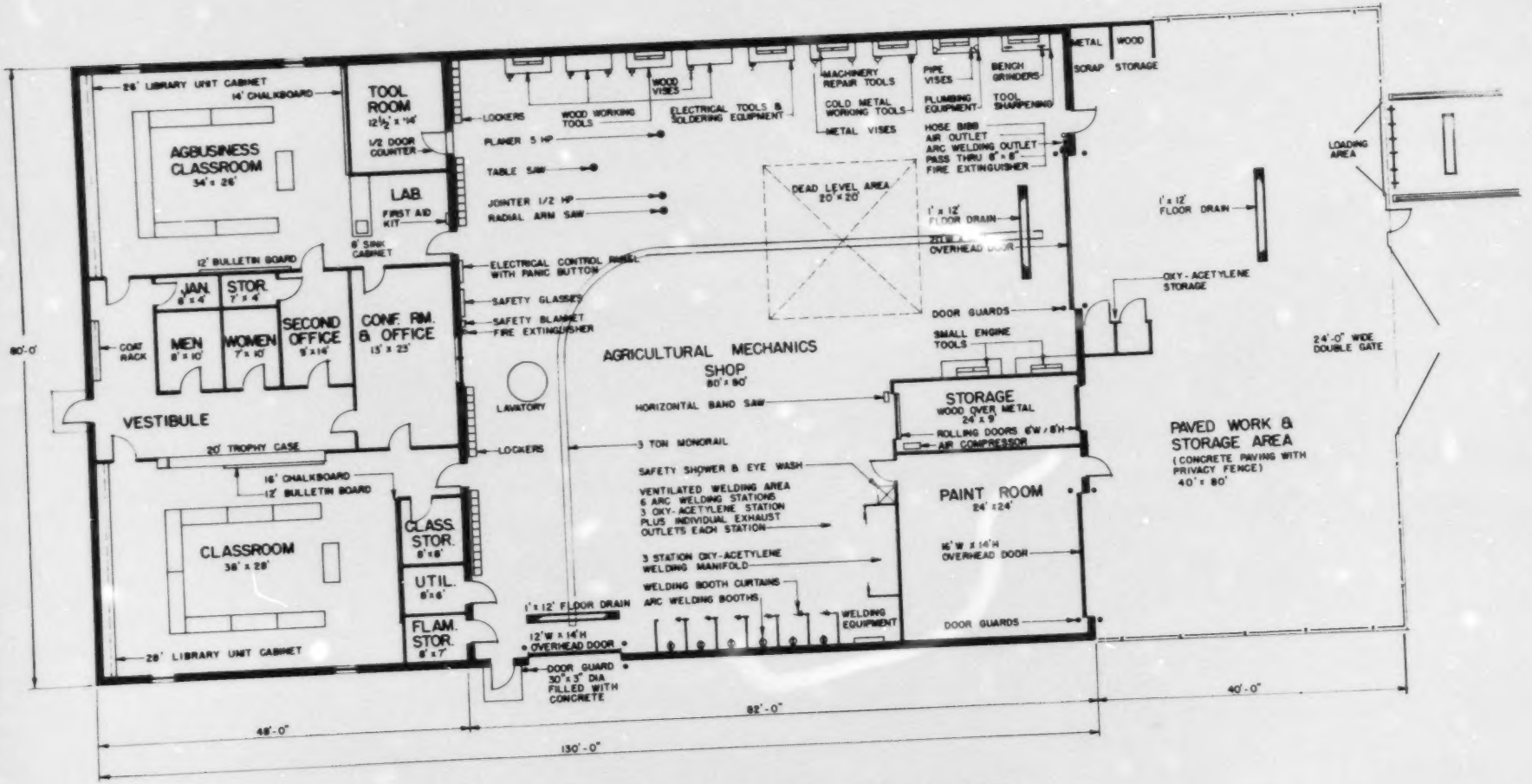

MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN VII 1983

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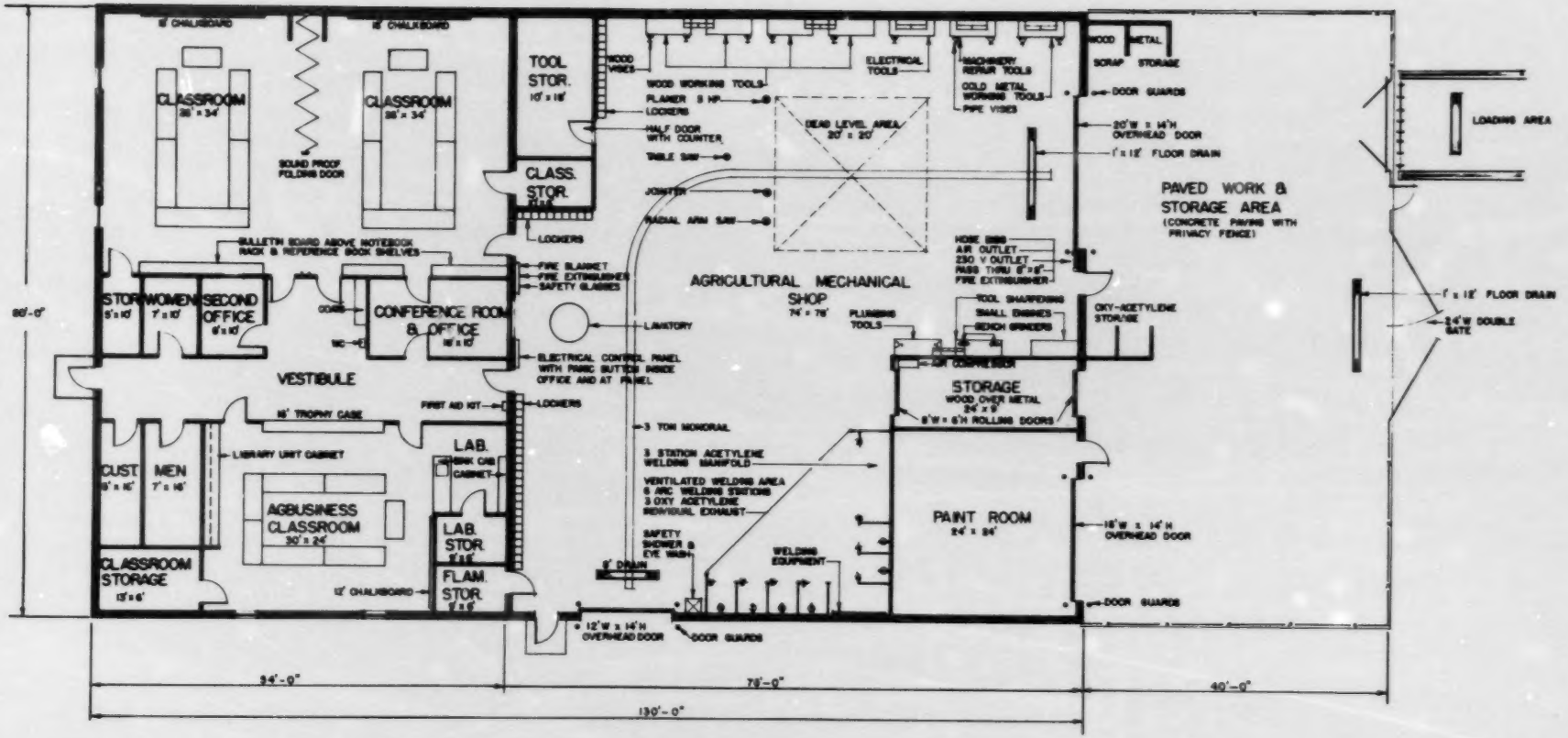

MISSOURI VOCATIONAL AGRICULTURE BUILDING

FLOOR PLAN VIII 1983

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